



# MEDICINAL PLANTS AND THEIR USES: A STUDY OF TWELVE SACRED GROVES IN CUDDALORE AND VILLUPURAM DISTRICTS, TAMIL NADU, INDIA

S. Karthik<sup>1</sup> | Subramanian. M<sup>1</sup> | S. Ravikumar<sup>2</sup> | R. Dhamotharan<sup>3</sup>

<sup>1</sup> Ph.D Scholars, P.G. and Research Department of Plant Biology and Plant Biotechnology, Presidency College (Autonomous), Kamarajar Road, Chennai 600 005, Tamil Nadu.

<sup>2</sup> Asst. Prof., P.G. and Research Department of Plant Biology and Plant Biotechnology, Presidency College (Autonomous), Kamarajar Road, Chennai 600 005, Tamil Nadu.

<sup>3</sup> Assoc. Prof., P.G. and Research Department of Plant Biology and Plant Biotechnology, Presidency College (Autonomous), Kamarajar Road, Chennai 600 005, Tamil Nadu.

## ABSTRACT

Sacred groves are a small area of forest protected by the local people. It is one of the rich biodiversity spots wherein rare plants, animals and medicinal plants are established in the reserved forest. The local people believe that the spirits of their ancestors are present in the grove. This is one of the major reasons why the groves have been left in undisturbed condition. For ethnomedicinal documentation study, there are about twelve sacred groves were selected from the Cuddalore and Villupuram districts. The study sites are Dhanam (DM), Edaicheruvi (EI), Konalavadi (KI), Kuthanur (KR), M.Parur (MR), Murarbad (MD), Pallavadi (PI), Siruvambur (SR), Udaiyanachi (UI), V.Palaiyam (VM), Veerapalayangaram (VIM) and Visalur (VR) (Fig.1). There are about 89 plant species belonging to 83 genera and 49 families were enumerated. The plants include herbs 32, trees 25, lianas 12, climbers and shrubs are each 10 plant species are documented. The details of the plants and their uses were collected from the local vaidyas. A few plants worth to mentioned here and they are: *Alangium salviifolium*, *Amaranthus viridis*, *Azadirachta indica*, *Carmona retusa*, *Diospyros melanoxylon*, *Jasminum auriculatum*, *Ocimum tenuiflorum*, *Peltophorum pterocarpum* and *Wrightia tinctoria*. These plants are the most commonly collected plants from the sacred groves. The plant parts mostly used for the treatment is the leaves (37 plant species, 42 %), roots (13 plant species, 13%), whole plants (12 plant species, 13%) fruits (7 plant species, 8%), seeds (5 plant species, 6%), latex (4 plant species, 4%) barks and gum (3 plant species, 3%), flowers (2 plant species, 2%), and tubers (2 plant species, 2%). In this paper, I have made an attempt to explore some of the plants used for traditional uses.

**KEY WORDS:** Sacred groves, Ethno-botany, plant diversity, diseases.

## Introduction:

Conservation of plants and other natural resources has been an integral part of the cultural ethos of indigenous communities. Different religions having their own traditions, beliefs, and rituals are associated with conserving the biodiversity and forests products (Karthikeyan and Tangavelou, 2011). Thousands of plants are used by rural and tribal communities to make crude drugs to cure various ailments. India is a highly populated country and it is difficult to provide medicine for all the people. However, the majority of the rural people use the plants as it is or their parts which are found in and around their locality as primary health care (Ramesh et al., 2014). Therefore, it is important to protect and restore the plants around their living place.

Sacred groves are one of the means of conserving biodiversity and thus play an important role in protecting native species, giant trees, lianas, shrubs and it is a treasure house of threatened and medicinal plants. It also acts as a gene bank for economic species and laboratory for environmentalists (Spencer, 1998; Manikandan et al., 2011). Collection and removal of any materials from the sacred groves is strictly prohibited (Gadgil and Vartak, 1976); it is protected by their natural condition. Sacred groves can be used as indicators for potential natural vegetation (Schaaf, 1998) and are vital for the well being of the society. Sacred groves play the role of niche for the large number of birds, plants, mammals and hence they indirectly help in the conservation of living organisms (Oliver King et al., 1997). Scientific reports also confirm the fact that sacred groves protect a variety of flora and fauna (Ray and Ramachandra, 2010). Sacred groves provide the inextricable link between present society to the past in terms of biodiversity, culture, religious and ethnic heritage (Khan et al., 2008). Various traditional approaches to conservation of nature require a belief system which includes a number of prescriptions and proscriptions for restrained resource use (Gadgil, and Berkes., 1991). According to several reports, there is a concentration of rare, endemic and endangered species in the sacred groves (Sukumar and Raj, 2008).

Sacred groves are still protected and possess a heritage of diverse gene pool of ethno-botanically important species (Ved et al., 2001). Around 1,00,000 to 1,50,000 sacred groves are reported in India (Malhotra, 2007). Medicinal plants that once occurred abundantly in extensive areas are vanishing fast due to various anthropogenic activities like habitat alteration, overexploitation, pollution, global climate change, invasion of exotic species and population explosion (Khumbongmayum et al., 2005). However, the sacred groves found in different regions of India possess rich diversity of medicinal plants and provide a suitable habitat for their sustainable and natural regeneration (Boraiah et al., 2003; Aris, 2000).

The protection of a large number of medicinal plants in the sacred groves is well documented by earlier studies. It is also observed that more than 35,000 plant species are being used around the world for medicinal purposes (Sukumar and Raji, 2010).

## Methodology:

The task of documentation of the medicinal plants was done by tapping the vast knowledge available with the indigenous communities. Plants were collected and identified by using the standard literature such as *Floras of Madras Presidency* by Gamble, 1915-1936; *Further Illustrations on the Flora of the Tamil Nadu and Carnatic*. by Matthew, 1982, 1983 and 1988; *Flora of Tamil Nadu, India. Series I: Analysis. Vol. 1.* By Nair and Henry, 1983; *Flora of Tamil Nadu, India. Series I: Analysis. Vol. 3.* By Henry et al., 1987 and 1989; *Legumes of India by Sanjappa, 1992; The Family Euphorbiaceae in India – A synopsis of its profile, taxonomy and bibliography* by Balakrishnan and Chakrabarty, 2007), have also been referred for the correct botanical names for the specimens identified. A herbarium was also prepared for all the plants and has been deposited in the Presidency College, Chennai. The details of the plants including their vernacular name, useful parts of the plants and medicinal uses were tabulated.

## Result and discussion:

A total of 89 plant species were identified in the twelve sacred groves. The plants include 25 trees, 32 herbs, 12 lianas, 10 shrubs, 10 climbers belonging to 49 families (Fig.1). The local Vaidyas were interviewed about the way in which they are using the plant parts as medicine for treating various diseases. The plant parts mostly reported in this regard were leaves (37 plant species, 42 %), roots (13 plant species, 13%), whole plants (12 plant species, 13%) fruit (7 plant species, 8%), seeds (5 plant species, 6%), latex (4 plant species, 4%) bark and gum (3 plant species, 3%), flowers (2 plant species, 2%), and tubers (2 plant species, 2%) (Fig. 2).

The following species were enumerated: *Diospyros montana* (12 Sgs), *Morinda pubescens* (12 Sgs), *Cassine glauca* (10 Sgs), *Strychnos nux-vomica* (10 Sgs), *Acacia leucophloea* (8 Sgs), *Alangium salviifolium* (7 Sgs), *Strychnos potatorum* (7 Sgs), *Wrightia tinctoria* (7Sgs) are dominant trees. *Glycosmis mauritiana* (12 Sgs), *Tarenna asiatica* (12 Sgs), *Jatropha gossypifolia* (9 Sgs), *Carmona retusa* (8Sgs), *Lantana camara* (8Sgs), are dominant shrubs. *Pachygone ovata* (9 Sgs), *Dioscorea pentaphylla* (7 Sgs), *Toddalia asiatica* (5 Sgs) are dominant lianas. *Opuntia dillenii* (11 Sgs), *Acalypha indica* (10 Sgs), *Phyllanthus amarus* (10Sgs), *Abutilon indicum* (8 Sgs), *Tribulus terrestris* (8 Sgs), are dominant herbs. *Passiflora foetida* (12 Sgs), *Gymnema sylvestre* (7 Sgs), *Asparagus racemosus* (6Sgs). *Cucumis maderaspatana* (4Sgs) are domi-

nant climbers (Fig.3, Table. 2).

Sacred groves are a collection of medicinal plants which are a remedy for many complicated diseases like piles, bronchitis and colds. *Alangium salviifolium* is used for sexual activities, *Amaranthus viridis* is used as an appetizer, *Azadirachta indica* is used for eye diseases and dandruff, *Carmona retusa* is used for diarrhea, *Diospyros melanoxylon* is used for syphilis, bronchitis and dysentery, *Jasminum auriculatum* is used for ring worm, *Ocimum tenuiflorum* is used for ulcer and mouth infection, *Peltophorum pterocarpum* is used for psoriasis, *Wrightia tinctoria* is used for lecoderma (Table. 1). Certain plants are used for various treatments like healing wounds, throat infection, diarrhea, itches, skin diseases, headache, stomach ulcer, tumor, earache, eye pain, diabetes, colds and cough in general are also documented by (Karthik et.al., 2015). In the present study, medicinal plants vary from a minimum of 23 plant species in Udaiyanachi (UI) to a maximum of 51 plant species in Edaicheruvi (EI) from twelve sacred groves (Table-2).

### Conclusion:

The present study indicates that there are about 89 plant species used for medicinal purposes. They include 25 trees, 32 herbs, 12 lianas, 10 shrubs and 10 climbers belonging to 49 families. Due to rapid destruction of groves in various ways, urgent action should be initiated to preserve these cultural heritage sites in their existing condition.

### Acknowledgement

I wish to express my gratitude to Dr. Nanditha Krishna, Honorary Director of C.P.R. Environmental Education Centre for her constant encouragement in the pursuit of my studies in this field. I am also thankful to M. Amirthalingam and N. Onkar for their valuable comments on this paper.

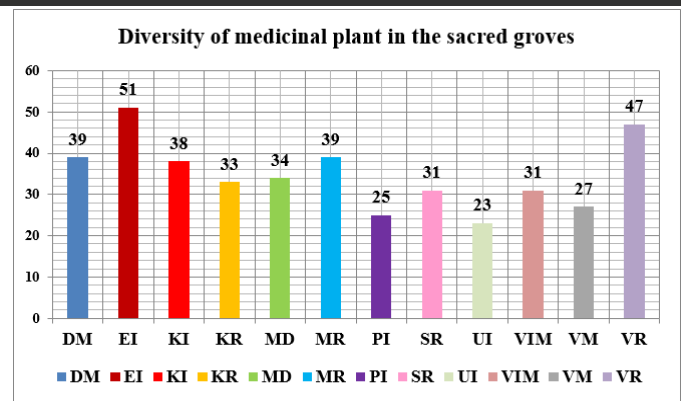


Fig. 4

### References

- Airi S., Rewal R.S., Dhar U. and Purohit A.N. (2000). Assessment of availability and habitat preference of Jatamansi – a critically endangered medicinal plant of West Himalaya, *Curr.Sci.*, Vol.79, pp.1467-1479.
- Balakrishnan, N.P., Chakrabarty, T. (2007). The Family Euphorbiaceae in India – A Synopsis of its profile, taxonomy and bibliography. Bishen Singh Mahendra Pal Singh, Dehra Dun. 500p.
- Boraiah K.T., Vasudeva R., Shonil A. and Kushalappa C.G. (2003). Do informally managed sacred groves have higher richness and regeneration of medicinal plants than state – managed reserve forests?, *Curr.Sci.*, 84(6); 804-808.
- Gadgil, M. and Berkes, F. (1991). Traditional resource management systems. *Research management and optional* 8: 127- 141.
- Gadgil, M. and Vartak, V.D. (1976). Sacred groves of Western Ghats of India. *Ecological Botany* 30: 152-160.
- Gamble, J.S. (1915-1936). Flora of the Presidency of Madras. 11 Parts (Parts 1-7 by Gamble and 8-11 by C.E.C. Fischer), London. Repr. Edn. 1957. Botanical Survey of India, Calcutta. 2017p.
- Henry, A.N., Chithra, V., Balakrishnan, N.P. (1989). Flora of Tamil Nadu, India. Series 1: Analysis. Vol. 3. Botanical Survey of India, Coimbatore. 173p.
- Henry, A.N., Kumari, G.R., Chithra, V. (1987). Flora of Tamil Nadu, India. Series 1: Analysis. Vol. 2. Botanical Survey of India, Coimbatore. 258p.
- Karthik, S., Subramanian, M., Ravikumar, S., Dhamotharan, R. (2016). Ethnobotanical study of selected sacred groves in Cuddalore and Villupuram Districts, Tamil Nadu, India. *Int. J. Curr. Res. Biosci. Plant Biol.* 3(1), 92-103.
- Karthikyan, S. and A.C. Tangavelou. (2011). *Journey through Sacred groves*. Bio-Science Research Foundation. Pondicherry.
- Khan M.L., Khumbongmayum A.D. and Tripathi R.S.(2008). The Sacred Groves and their significance in conserving biodiversity; An overview, *Inter. J. Ecology and Environmental Sci.* 34 (3): 277-291.
- Khumbongmayum A.D., Khan M.L. and Tripathi R.S. (2005). Ethno-medicinal plants in the sacred groves of Manipur. *Indian Journal of Traditional knowledge*, 4 (1): 21-32.
- Malhotra, K.C., Gkhale, Y., Chatterjee, S. and Srivastava S. (2007). Sacred groves in India. An Overview. Indira Gandhi Rashtriya Manav Sangrahalay, Bhopal. Aryan Books International. New Delhi. 1- 170.
- Manikandan, P., D.R. Venkatesh and K. Muthuchelian. (2011). Conservation and Management of Sacred groves in Theni District, Tamil Nadu, India. *J. Biosci. Res* 2:76-80.
- Matthew, K.M. (1982). Illustrations on the Flora of the Tamilnadu Carnatic. Vol.2. The Diocesan Press, Madras. 1027p.
- Matthew, K.M. (1983). The Flora of the Tamilnadu Carnatic. Vol. 3 (Parts 1 and 2). The Diocesan Press, Madras. 2154p.
- Matthew, K.M. (1988). Further Illustrations on the Flora of the Tamil Nadu Carnatic. Vol. 4. The Diocesan Press, Madras. 915p.
- Nair, N.C., A.N. Henry. (1983). Flora of Tamil Nadu, India. Series I: Analysis. Vol. 1. Botanical Survey of India, Coimbatore. 188p.
- Oliver King, I.E.D., Viji, C. and Narasimhan, D. (1997). Sacred groves: Traditional ecological heritage. *International Journal of Ecology and Environmental Sciences* 23: 463- 470.
- Ramesh D, Anbalagan M, Arumugam K.(2014). Ethnobotanical survey on sacred grove of Panriti Taluk Cuddalore District, Tamilnadu, India. *Intl. J. Res Pl Sci.* Vol.4.No.1. pp.1-7.
- Ray R, Ramachandra T.V. (2010) Small sacred grove in local landscape : Are they really worthy for conservation? *Curr. Sci.* 98:1078-1080
- Sanjappa, M. (1992). Legumes of India. Bishen Singh Mahendra Pal Singh, Dehra Dun. 338p.
- Schaaf T.(1998). Sacred groves in Ghana: Experiences from an integrated study project. In: Ramakrishnan, P.S., Saxena K.G. and Chandrasekhar U.M.(Editors), *Conserving the Sacred for Biodiversity Management*. UNESCO and Oxford-IBH Publishing, New Delhi Pages, pp.145-150
- Spencer P. Life Reserves. *Aborvitae IUCN/WWF Conservation Newsletter* 1998;8:14.
- United Nations Educational Scientific and Cultural Organization. Sacred sites- cultural integrity, biological diversity (1996) In: Programme proposal, November, Paris.
- Sukumaran S, Raj ADS (2008) Rare, endemic, threatened (RET) trees and lianas in the sacred groves of Kanyakumari district. *The Indian Forester* 133, 1254-1267.
- Sukumaran S, Raj ADS (2010). Medicinal plants scared groves in Kanyakumari district, Southern Western Ghats. *Indian J. Trad. Knowl.*, 9(2): 294-299.
- Ved D K, Parthima C L, Morton Nancy and Darshan S.(2001). Conservation of Indian's medicinal plant diversity through a novel approach of establishing a network of insitu gene banks, In: Uma Shanker R, Ganeshaiah K N and Bawaks (eds) *Forest genetic resources: Status threats and conservation strategies*, Oxford and IBH New Delhi.

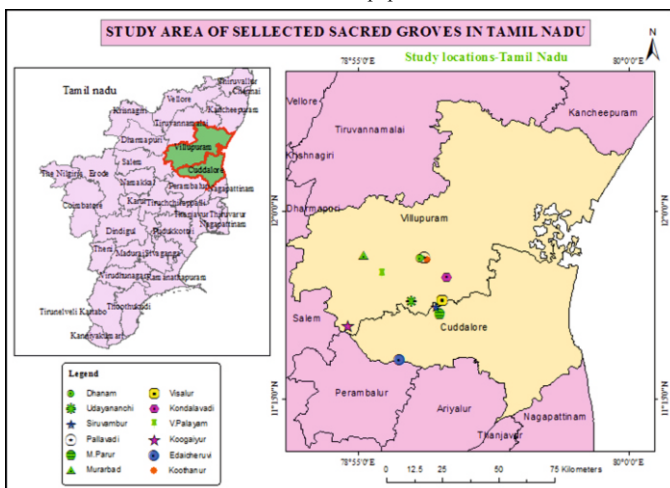


Fig.1. Distribution of sacred grove study sites in Cuddalore and Villupuram districts of Tamil Nadu.

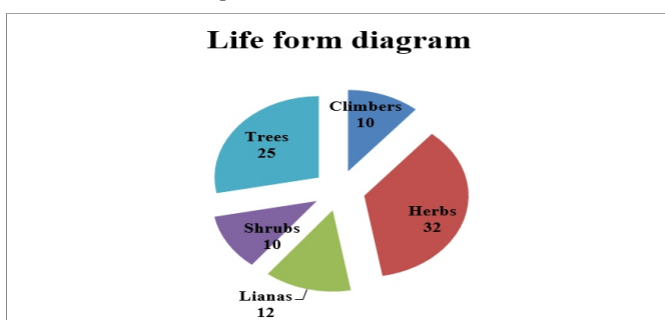


Fig.2

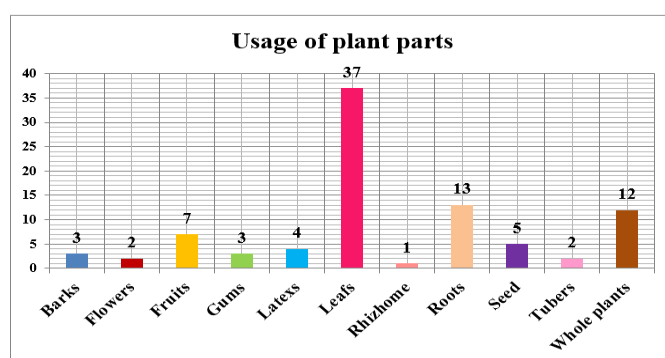


Fig.3

Table. 1. Plants species recorded in the selected sacred groves of Villupuram and Cuddalore district

Sl.no	Botanical name	Habit	Family	Vernacular name	Common name	Plant part uses	Administration and mode of preparation of medicines	Medicinal use(diseases)	Name of the Grove
1	<i>Abutilon indicum</i> (L.) Sweet	H	Malvaceae	Thuthi	Indian mallow	Whole plant	Leaves roasted in castor oil are applied to cure piles and anus irritation. Seed used to reduce venereal heat	Piles , reduces venereal heat	KI
2	<i>Acacia leucophloea</i> (Roxb.) Willd.	T	Mimosaceae	Velvelam	White bark acacia	Gum	Gum kept in water for one day and taken internally to cure bronchitis	Bronchitis	MR
3	<i>Acalypha indica</i> L.	H	Euphorbiaceae	Kuppaimeni	Indian copper leaf	Leaf	Extract of 5g leaves ground with one Amala and added with one litre of water is taken every 10 minutes to get relief from drugs	Relief from drugs	EI
4	<i>Achyranthes aspera</i> L.	H	Amaranthaceae		Prickly chaff flower	Whole plant	Whole plant is ground into ash and mixed with honey and taken with two seeds of pepper for 5 days to give relief from cough.	Coughs	EI
5	<i>Alangium salviifolium</i> (L. f.) Wangerin	T	Alangiaceae	Azhingial	Sage leaved alangium	Fruit	Fruits if taken stimulates sexual activities	Sexual activities	DM
6	<i>Amaranthus viridis</i> L.	H	Amaranthaceae	Kuppai keera	Pigweed	Leaf	Leaves crushed in to a juice and taken along with other pulses to increase appetiser	Appetiser	KI
7	<i>Annona squamosa</i> L.	T	Annonaceae	Sitha palam	Custard apple	Leaf	Leaf juice is used as nasal drops to cure unconsciousness and leaf and young fruits made into paste is applied for eczema	Unconsciousness and eczema	KR
8	<i>Aristolochia indica</i> L.	C	Aristolochiaceae	Eshwaramouli	Indian birthwort	Root	Decoction of root is a valuable antidote to bite of poisonous insects and snakes	Snake bites	KI
9	<i>Asparagus racemosus</i> Willd.	C	Asparagaceae	Thanneer vitankilangu	Satawari	Tuber	Extract of tuber with ghee and pepper consumed regularly to increase sexual activity	Aphrodisiac	EI
10	<i>Azadirachta indica</i> A. Juss.	T	Meliaceae	Vempu	Neem	Leaf	Daily clean the teeth with neem twig. This prevents gum diseases and a few leaves crushed and mixed with 1litre water to wash the face to give relief for eye pain. Paste of leaves applied to head to cure dandruff	Gum disease and Eyes pain, Dandruff	KR
11	<i>Azima tetracantha</i> Lam.	S	Salvadoraceae	Mutsangaan	Needle brush	Leaf	The paste of the leaves used as an application for tumors of the neck to cure eczema	Tumor and eczema	SR
12	<i>Bauhinia racemosa</i> Lam.	T	Caesalpiniaceae	Aathi	Bidi leaf tree	Leaf	Paste of the leaves are applied to wound	Wound	MR
13	<i>Biophytum sensitivum</i> (L.) DC.	H	Oxalidaceae	Tintanali	Sensitive plant	Whole plant	The whole plant used as a diuretic, stimulant	Diuretic and stimulant	PI
14	<i>Cadaba fruticosa</i> (L.) Druce	S	Capparaceae	Viluthi	Indian cadaba	Root	Decoction of root monthly taken twice to cure urine disorder and ensure easy flow of urine	Urine Disorder	VIM
15	<i>Canavalia virosa</i> (Roxb.)	C	Fabaceae	Sikappu thampattai	Jack bean	Leaf	Extract of leaves is a cure for fever and to purify blood	Fever	KI
16	<i>Cansjera rheedii</i> J.F. Gmel.	L	Opiliaceae	Naravanji	Rheed's false olive	Leaf	Leaf extract is given to pregnant women because it is helpful to relieve pain in post-natal period	Postnatal pain	KI
17	<i>Carissa spinarum</i> L.	S	Apocynaceae	Kala	Wild karanda	Fruit	It is mainly used as pickles. Decoction of roots to cure madness	Cure madness	VIM
18	<i>Carmona retusa</i> (Vahl) Masam.	S	Boraginaceae	Kuruvinci	Carmona	Leaf	Small pieces of leaf are boiled in one cup of water. This decoction is taken for treating diarrhea	Diarrhea	PI
19	<i>Cassia occidentalis</i> L.	H	Caesalpiniaceae	Peyiavarai	Coffee senna	Whole plant	Whole plant is ground and dried in shade light and boiled and filtered with water. And then applied for 21 days to give relief for spasm.	Spasm	KR
20	<i>Cassine glauca</i> (Rottb.) Kuntze	T	Celastraceae	Karuvali	Ceylon tea	Bark	Stem bark is crushed and externally applied for headache and fever	Headache and fever	EI
21	<i>Chloris barbata</i> Sw.	H	Poaceae	Kuruthu pillu	Airport grass	Leaf	Extract of decoction from leaves are boiled with water to cure fever and diarrhea	Fever and diarrhea	MD



22	<i>Cissampelos pareira</i> L.	C	Menispermaceae	Vatta tiruppi	Velvet leaf	Leaf	It is the most important plant for women because decoction of leaves prevent miscarriage and bleeding after childbirth	Prevent miscarriage and stop bleeding	MR
23	<i>Cleome gynandra</i> L.	H	Capparaceae	Thaivelai	Wild spider flower	Leaf	Old leaves are bitter and collected. They are made into a paste with rice water and applied externally for relief from epilepsy	Epilepsy	DM
24	<i>Clerodendrum phlomidis</i> L. f.	H	Laminaceae	Thaluthalai	Arni	Leaf	The leaves are boiled in water to be taken internally to cure arthritic pain	Arthritic pain	KI
25	<i>Clitoria ternatea</i> L.	C	Fabaceae	Sangu poo	Butterfly pea	Leaf	The paste of leaves are applied externally for thumb sprain	Sprain	EI
26	<i>Cocculus hirsutus</i> (L.) W.Theob.	C	Menispermaceae	Kattu kodi	Broom creeper	Leaf	The leaves are ground and mixed with water to form a jelly . It is the best medicine for gonorrhea	Gonorrhea	VIM
27	<i>Convolvulus arvensis</i> L.	H	Convolvulaceae	Poomisara pundu	Field bindweed	Whole plant	Decoction of whole plant used for jaundice and stomach pain	Jaundice and stomach pain	MR
28	<i>Corchorus aestuans</i> L.	H	Malvaceae	Kachiri	Jute	Root	Extract of the root is taken to treat gonorrhea and cure urinary disorder	Gonorrhea and urinary disorder	UI
29	<i>Crossandra infundibuliformis</i> (L.) Nees	H	Acanthaceae	Kankamaram	Crossandra	Flower	The flowers are a stimulant and aphrodisiac	Aphrodisiac	DM
30	<i>Cucumis maderaspatana</i> L.	C	Cucurbitaceae	Musu musukai	Madras pea pumpkin	Leaf	Leaf extract is mainly used in the treatment of jaundice	Jaundice	EI
31	<i>Cyanotis cristata</i> (L.) D. Don	H	Commelinaceae Mirb.	Kuthirai kulampadi	Nabhali	Root	Paste of roots can be applied externally on swelling of body to remove poison from body by snake bite.	Swelling and snake bites	EI
32	<i>Cyanthillium cinereum</i> (L.) H.Rob	H	Asteraceae	Poovankurunt hal	Little ironweed	Whole plant	Crushed extract of leaf juice is used on children to stop bed- wetting. It is also used to stop smoking.	Bed-wetting and Stop smoking	UI
33	<i>Cyperus rotundus</i> L.	H	Cyperaceae Juss.	Korai	Nut grass	Rhizhome	The juice of the extract from rhizhome and ginger is crushed. Decoction is used to cure typhoid and menstrual disorder	Typhoid and menstrual disorder	VR
34	<i>Dalbergia sissoo</i> Roxb. ex DC.	T	Fabaceae	Sisu	Shisham	Seed	Extract of oil from seed is applied on burning skin to cure itching problem	Itching problem	KR
35	<i>Derris scandens</i> (Roxb.) Benth.	L	Fabaceae	Kodi pungu	Hog creeper	Leaf	Decoction of leaves taken for treatment of snake poison and food poison	Snake poison and food poison	VIM
36	<i>Dioscorea pentaphylla</i> L.	L	Dioscoreaceae	Kattu valli	Five leaf yam	Tuber	Tubers are boiled in water and have to be eaten weekly once to increase sexual activity	Sexual activities	EI
37	<i>Diospyros ebenum</i> J. Koeng. Ex Retz.	T	Ebenaceae	Karimaram	Indian ebony	Leaf	Crushed leaves are apply externally on the face to reduce blisters	Reduce blisters	MR
38	<i>Diospyros melanoxylon</i> Roxb.	T	Ebenaceae	Karunthumpi	Coramendal ebony	Bark	It is used for the treatment of a variety of diseases like syphilis, bronchitis. But mainly the powder of the bark is used to cure dysentery	Syphilis, Bronchitis, Dysentery	KI
39	<i>Diospyros montana</i> Roxb.	T	Ebenaceae	Kaulimaram	Bombay ebony	Gum	Gum kept in curd for one day and consumed to cure tuberculosis	Tuberculosis	MD
40	<i>Ecbolium viride</i> (Forssk.) Alston	H	Acanthaceae	Pachaikanaka maram	Green shrimp plant	Leaf	Leaves extract is taken to cure internally jaundice	Jaundice	KI
41	<i>Euphorbia antiquorum</i> L.	T	Euphorbiaceae	Sathurakalli	Triangular spruge	Latex	One teaspoon of this latex is mixed with tamarind and cumin and is taken to cure piles	Hemorrhoids	EI
42	<i>Evolvulus nummularis</i> L.	H	Convolvulaceae	Eli katu elai	Roundleaf bind weed	Whole plant	The whole plant is used for increasing memory power and to decrease hysteria	Memory power and hysteria	VR
43	<i>Ficus religiosa</i> L.	T	Moraceae	Arasu	Peepal	Leaf	The leaves are taken with 3 peppers for 49 days to cure uterine problem	Uterine disorder	VIM
44	<i>Ficus hispida</i> L. f.	T	Moraceae	Peyi athi	Hairy pig	Latex	Latex is applied for 4 to 5 days on the affected skin to cure leprosy	Leprosy	EI
45	<i>Flacourtia indica</i> (Burm. f.) Merr.	S	Flacourtiaceae	Sothai kala	Governor's plum	Gum	Fresh juice is taken to improve digestion	Digestion strength	VIM
46	<i>Glycosmis mauritiana</i> (Lam.) Tanaka	S	Rutaceae	Kolinchi	Orange berry	Leaf	The juice of leaves is taken orally to cure gastric problem	Gastric problem	UI

47	Gymnema sylvestre (Retz.) Schult.	C	Apocynaceae	Sarkarai kolli	Gurmer	Leaf	A few leaves are chewed daily to reduce blood sugar.	Blood sugar	EI
48	Ichnocarpus frutescens (L.) W.T.Aiton	C	Apocynaceae	Paravalli	Black creeper	Root	Powdered root is used to reduce burning sensation and taken either internally or externally to clear stone in the bladder	Burning sensation and Stone bladder	UI
49	Jasminum auriculatum Vahl	L	Oleaceae	Juhi	Uchi mallikai	Root	Root paste is very useful for treating skin disease and especially to cure ring worm	Ring Worms	MR
50	Jatropha gossypifolia L.	S	Euphorbiaceae	Siriya amanakku	Bellyache bush	Leaf	The plant leaves are mixed with radish and nutmeg and crushed and filtered and applied on pimples. This stops bleeding from the wound	Blood bleeding	DM
51	Lantana camara L.	S	Verbenaceae	Unnichi	Lantana	Flower	Decoction of dried flowers are used for treating colds	Colds	DM
52	Madhuca longifolia (L.) J. F. Macbr.	T	Sapotaceae	Eluppai	Mahua	Seed	The oil extract from seeds can be applied on the affected area to cure rheumatism	Rheumatism	VR
53	Merremia tridentata (L.) Hall.f.	H	Convolvulaceae	Thiripanpul	Arrow leaf morning glory	Whole plant	The juice of the plant is taken internally to increase discharge of urine	Diuretic	KI
54	Mimosa pudica L.	H	Mimosaceae	Thotta siningi	Touch me not	Leaf	The leaves are mixed with cumin and onion and crushed and mixed with butter milk. It is taken to cure bleeding during periods	Menorrhagia	MD
55	Mollugo pentaphylla L.	H	Molluginaceae	Kuthira pundu	Five leaved carpetweed	Root	Root decoction is used to cure eye diseases	Eyes diseases	MD
56	Morinda pubescens J.E. Smith	T	Rubiaceae	Nuna	Indian mulberry	Fruit	The fruit juice is given as an energy tonic and to stimulate the appetite	Energy drink	UI
57	Nyctanthes arbor-tristis L.	T	Oleaceae	Pavala malli	Har singer	Leaf	Five leaves are boiled in one litre of water and taken internally to cure malaria	Malaria	DM
58	Ocimum tenuiflorum L.	H	Lamiaceae	Tulsi	Holy basil	Leaf	A few leaves are chewed. This will cure ulcer and infections in the mouth	Ulcer and Mouth infection	MR
59	Opuntia dillenii (Ker Gawl.) Haw.	H	Cactaceae	Sappathi kalli	Prickly pear	Fruit	This edible fruit gives energy to the body	Energy for body	KR
60	Pachygona ovata (Poir.) Hook. f. & Thomson	L	Menispermaceae	Kattu kodi	Fish berry	Leaf	The paste of leaves are used to cool the body. Leaf juice taken internally to improve fertility and give strength to the body	Cooling body and fertility	SR
61	Parthenium hysterophorus L.	H	Asteraceae	Mukuthi poo	Carrot grass	Leaf	The leaf paste is applied externally to cure skin diseases	Skin diseases	SR
62	Passiflora foetida L.	C	Passifloraceae	Muppari savali	Love -in-mist	Fruit	Extract made from fruit is used to control asthma	Asthma	MR
63	Pedaliu murex L.	H	Pedaliaceae	Yanai nerunchil	Large caltrops	Whole plant	The whole plant is ground to make a paste. A small amount of the paste is taken with coconut water continuously for three days to cure kidney stone .	Kidney stone and Improve sex vigor in men	EI
64	Peltophorum pterocarpum (DC.) K. Heyne	T	Caesalpinaceae	Eyal vagai	Copperpod	Bark	The powdered bark is made into a paste and applied for treating psoriasis	Psoriasis	DM
65	Phoenix pusilla Gaertn.	S	Arecaceae	Echam palam	Small wild date palm	Leaf	Leaf juice is made into a drink and taken internally to reduce intestinal worms	Intestinal worm	PI
66	Phyllanthus amarus Schumach. & Thonn.	H	Euphorbiaceae	Keelaneli	Carry me seed	Root	The root is ground and made into a paste. The paste is then boiled with coconut oil and then filtered. Then it can be applied on the scalp for growing hair	Disappear baldness	VM
67	Plumbago zeylanica L.	H	Plumbaginaceae	Chitirai mulam	Plumbago	Root	The root of the plant is crushed and made into a juice. It is used to stimulate hunger	Stimulant Hungry	EI
68	Premna latifolia Roxb.	T	Lamiaceae	Erunai munnai	Dusky Fire Brand Bark	Root	The roots are boiled with water and taken internally to cure gastric problems	Gastric problems	KI
69	Pterolobium hexapetalum (Roth) Santapau & Wagh	L	Caesalpinaceae	Karu indhu	Indian redwing	Leaf	Decoction of leaves is taken internally during labour to reduce pain	Childbirth pain	PI

70	Ruellia prostrata Poir.	H	Acanthaceae	Pottakanchi	Bellweed	Leaf	The extract of the leaves are mixed with cow's milk and taken daily twice to cure insect allergy	Insect allergy	VR
71	Sapindus emarginatus Vahl	T	Sapindaceae	Poovanthi kottai	Notched leaf soapnut	Seed	The oil is extracted from seeds and to applied externally for treating paralysis	Paralysis	MD
72	Sarcostemma acidum (Roxb.) Voigt	L	Asclepiadaceae	Kodikalli	Leafless east-indian vine	Latex	Latex of the plant can be applied on any insect bite. It removes the poison from the insect bite	Poison	EI
73	Secamone emetica (Retz.) R. Br. ex Schult.	L	Apocynaceae	Ankaravalli	Emetic secamone	Whole plant	Whole plant is crushed into a juice and mixed with jaggery. It can be taken internally to stop whitish discharge of mucus from the vagina	Leucorrhoea	EI
74	Senna siamea (Lam.) H. S. Irwin & Barneby	T	Mimosaceae	Manjal konrai	Iron wood	Leaf	Leaf decoction is taken internally to cure constipation	Constipation	VR
75	Solanum trilobatum L.	H	Solanaceae	Thuthuvalai	Purple Fruited Pea Eggplant	Fruit	The juice of the fruit is taken internally for treating stomach ache	Stomachache	EI
76	Spermacoe hispida L.	H	Rubiaceae	Nathaichuri	Button weed	Whole plant	Decoction of the whole plant is a remedy for decrease of body heat	Reduces Pita	SR
77	Streblus asper Lour.	T	Moraceae	Parayi	Sand paper tree	Latex	The latex can be applied on the cracks of the hand and heels. After two hours wash with boiled water to cure cracks	Cracks of Heel	KI
78	Strychnos colubrina L.	L	Loganiaceae	Sirukodi etti	Snake wood	Root	The root is ground with pepper and made into a paste and consumed to cure diarrhea	Diarrhea	MD
79	Strychnos nux-vomica L.	T	Loganiaceae	Etti	Nux vomica	Leaf	The young leaves are ground and mixed with garlic and boiled with castor oil. This extract is used for curing head ache on one side only	One side headache	UI
80	Strychnos potatorium L. f.	T	Loganiaceae	Thethan kottai	Clearing nut tree	Seed	The seed is made into a paste and applied on the forehead to relieve severe head pain	Head pain	MD
81	Symphorema involucratum ROXB.	L	Symphoremataceae	Vellaimalli kodi	Bhingri	Leaf	Leaves are crushed and applied on swelling to cure inflammation	Inflammation	KI
82	Tarenna asiatica (L.) Kuntze ex K.Schum.	S	Rubiaceae	Tharani	Asiatic Tarenna	Leaf	The leaves are made into a paste and applied on the affected area to cure paralysis	Paralysis	DM
83	Tecoma stans (L.) Juss. ex Kunth	T	Bignoniaceae	Sonnapatti	Yellow bells	Root	The root is ground with lemons and applied externally to remove poison of snake bite	Snake bites	SR
84	Tephrosia purpurea (L.) pers.	H	Fabaceae	Kolukayi velai	Wild indigo	Root	The smoke of the root is inhaled to cure asthma	Asthma	KR
85	Toddalia asiatica (L.) Lam.	L	Rutaceae	Milakaranai	Forest pepper	Leaf	The juice of leaves is taken internally for treating indigestion	Indigestion	MR
86	Tribulus terrestris L.	H	Zygophyllaceae	Nerunchil	Puncture vine	Whole plant	The powder of the whole plant is mixed with coconut water and taken on an empty stomach in the morning for three days to cure kidney stone	Wound	MD
87	Triumfetta rhomboidea Jacq.	H	Malvaceae	Ottu pullu	Burr bush	Fruit	The fruit is crushed with water and sugar and then filtered. The decoction is taken internally to cure venereal disease involving inflammatory discharge from the urethra or vagina.	Gonorrhea	DM
88	Tylophora indica (Burm. f.) Merr.	L	Asclepiadaceae	Naippalai	Indain ipecac	Leaf	The leaf is chewed for a few minutes daily in the morning for 4 days to cure stomach disorders. Otherwise leaf extract is mixed with milk and taken internally.	Stomach disorders	KR
89	Wrightia tinctoria (Roxb.) R. Br	T	Apocynaceae	Vetpalai	Sweet indrajao	Seed	A few seeds are ground with coconut oil and kept in the sun light for 21 days . Then it is filtered with oil and applied on skin to cure leucoderma	Leucoderma	VR

C- Climber, H- Herb, L- Liana, S- Shrub, T- Tree, DM- Dhanam, EI- Edaicheruvi, KI- Konalavadi, KR- Kuthanur, MR- M.Parur, MD- Murarbad, PI- Pallavadi, SR- Siruvambur, UI- Udaiyanachi, VM- V.Palaiyam, VIM- Veerapaiyangara and VR- Visalur.

Table. 2. Diversity of Medicinal plants recorded in selected sacred groves of Villupuram and Cuddalore district.

S.no	Plant name	DM	EI	KI	KR	MD	MR	PI	SR	UI	VIM	VM	VR
1	<i>Abutilon indicum</i> (L.) Sweet	*	*	*	*			*		*	*		*
2	<i>Acacia leucophloea</i> (Roxb.) Willd.		*	*	*		*			*	*	*	*
3	<i>Acalypha indica</i> L.	*	*	*		*	*	*	*		*	*	*
4	<i>Achyranthes aspera</i> L.	*	*		*		*		*		*		*
5	<i>Alangium salviifolium</i> (L. f.) Wangerin	*	*		*	*	*			*			*
6	<i>Amaranthus viridis</i> L.		*	*			*		*			*	*
7	<i>Annona squamosa</i> L.				*								
8	<i>Aristolochia indica</i> L.		*	*									
9	<i>Asparagus racemosus</i> Willd.	*	*	*	*						*		*
10	<i>Azadirachta indica</i> A. Juss.	*	*	*	*	*	*	*	*	*	*	*	*
11	<i>Azima tetracantha</i> Lam.		*				*		*				
12	<i>Bauhinia racemosa</i> Lam.						*						*
13	<i>Biophytum sensitivum</i> (L.) DC.	*	*	*				*					
14	<i>Cadaba fruticosa</i> (L.) Druce	*			*						*		
15	<i>Canavalia virosa</i> (Roxb.)			*					*				
16	<i>Cansjera rheedii</i> J.F. Gmel.			*									
17	<i>Carissa spinarum</i> L.	*	*		*						*		*
18	<i>Carmona retusa</i> (Vahl) Masam.	*		*			*	*	*		*	*	*
19	<i>Cassia occidentalis</i> L.		*		*		*					*	*
20	<i>Cassine glauca</i> (Rottb.) Kuntze	*	*	*	*	*	*	*	*	*		*	
21	<i>Chloris barbata</i> Sw.	*				*							*
22	<i>Cissampelos pareira</i> L.		*	*			*						
23	<i>Cleome gynandra</i> L.	*	*		*		*		*		*	*	
24	<i>Clerodendrum phlomidis</i> L. f.			*									
25	<i>Clitoria ternatea</i> L.		*										*
26	<i>Cocculus hirsutus</i> (L.) W.Theob.		*			*					*		
27	<i>Convolvulus arvensis</i> L.		*				*				*		*
28	<i>Corchorus aestuans</i> L.	*		*	*	*				*			*
29	<i>Crossandra infundibuliformis</i> (L.) Nees	*	*										
30	<i>Cucumis maderaspatana</i> L.		*			*			*				*
31	<i>Cyanotis cristata</i> (L.) D. Don		*				*						
32	<i>Cyanthillium cinereum</i> (L.) H.Rob	*			*	*			*	*			*
33	<i>Cyperus rotundus</i> L.											*	*
34	<i>Dalbergia sissoo</i> Roxb. ex DC.				*								
35	<i>Derris scandens</i> (Roxb.) Benth.						*				*	*	
36	<i>Dioscorea oppositifolia</i> L.		*	*	*	*		*		*			*
37	<i>Diospyros ebenum</i> J. Koeng. Ex Retz.						*				*		
38	<i>Diospyros melanoxylon</i> Roxb.			*									
39	<i>Diospyros montana</i> Roxb.	*	*	*	*	*	*	*	*	*	*	*	*
40	<i>Ecobolium viride</i> (Forssk.) Alston	*		*		*		*		*			*
41	<i>Euphorbia antiquorum</i> L.	*	*			*						*	
42	<i>Evolvulus nummularis</i> L.						*						*
43	<i>Ficus religiosa</i> L.										*		
44	<i>Ficus hispida</i> L. f.		*			*	*						*
45	<i>Flacourtia indica</i> (Burm. f.) Merr.										*		*
46	<i>Glycosmis mauritiana</i> (Lam.) Tanaka	*	*	*	*	*	*	*	*	*	*	*	*
47	<i>Gymnema sylvestre</i> (Retz.) Schult.		*	*	*		*	*			*	*	
48	<i>Ichnocarpus frutescens</i> (L.) W.T.Aiton	*								*			
49	<i>Jasminum auriculatum</i> Vahl		*				*						

50	<i>Jatropha gossypifolia</i> L.	*	*			*	*	*	*		*	*	*
51	<i>Lantana camara</i> L.	*			*	*		*	*	*		*	*
52	<i>Madhuca longifolia</i> (L.) J. F. Macbr.	*	*										*
53	<i>Merremia tridentata</i> (L.) Hall.f.			*									
54	<i>Mimosa pudica</i> L.		*	*		*							
55	<i>Mollugo pentaphylla</i> L.		*	*		*			*				*
56	<i>Morinda pubescens</i> J.E. Smith	*	*	*	*	*	*	*	*	*	*	*	*
57	<i>Nyctanthes arbor-tristis</i> L.	*											
58	<i>Ocimum tenuiflorum</i> L.						*						
59	<i>Opuntia dillenii</i> (Ker Gawl.) Haw.	*	*		*	*	*	*	*	*	*	*	*
60	<i>Pachygona ovata</i> (Poir.) Hook. f. & Thomson	*	*	*		*	*		*	*	*	*	
61	<i>Parthenium hysterophorus</i> L.	*			*				*			*	*
62	<i>Passiflora foetida</i> L.	*	*	*	*	*	*	*	*	*	*	*	*
63	<i>Pedaliium murex</i> L.		*				*				*	*	
64	<i>Peltophorum pterocarpum</i> (DC.) K.Heyne	*											
65	<i>Phoenix pusilla</i> Gaertn.	*						*					
66	<i>Phyllanthus amarus</i> Schumach. & Thonn.	*	*		*	*	*	*	*	*	*	*	
67	<i>Plumbago zeylanica</i> L.		*					*					
68	<i>Premna latifolia</i> Roxb.			*	*	*							
69	<i>Pterolobium hexapetalum</i> (Roth) Santapau & Wagh							*					*
70	<i>Ruellia prostrata</i> Poir.									*			*
71	<i>Sapindus emarginatus</i> Vahl		*	*	*	*							
72	<i>Sarcostemma acidum</i> (Roxb.) Voigt		*					*	*				*
73	<i>Secamone emetica</i> (Retz.) R. Br. ex Schult.		*	*									*
74	<i>Senna siamea</i> (Lam.) H. S. Irwin & Barneby												*
75	<i>Solanum trilobatum</i> L.		*		*		*				*		
76	<i>Spermacoce hispida</i> L.			*		*			*			*	
77	<i>Streblus asper</i> Lour.		*	*									*
78	<i>Strychnos colubrina</i> L.		*			*							
79	<i>Strychnos nux-vomica</i> L.	*		*	*	*	*	*	*	*	*		*
80	<i>Strychnos potatorum</i> L. f.	*		*		*	*		*	*			*
81	<i>Symphorema involucratum</i> Roxb.		*	*									
82	<i>Tarenna asiatica</i> (L.) Kuntze ex K.Schum.	*	*	*	*	*	*	*	*	*	*	*	*
83	<i>Tecoma stans</i> (L.) Juss. ex Kunth		*						*				
84	<i>Tephrosia purpurea</i> (L.) pers.	*			*	*			*			*	
85	<i>Toddalia asiatica</i> (L.) Lam.		*	*		*		*					*
86	<i>Tribulus terrestris</i> L.	*	*	*		*	*				*	*	*
87	<i>Triumfetta rhomboidea</i> Jacq.	*					*	*			*		
88	<i>Tylophora indica</i> (Burm. f.) Merr.				*								*
89	<i>Wrightia tinctoria</i> (Roxb.) R. Br				*	*	*	*	*	*			*

DM- Dhanam, EI- Edaicheruvi, KI- Konalavadi, KR- Kuthanur, MR- M.Parur, MD- Murarbad, PI- Pallavadi, SR- Siruvambur, UI- Udaiyanachi, VM- V.Palaiyam, VIM- Veerapalayangara and VR- Visalur.